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ABSTRACT

The criteria used to compare the effectiveness of the individualized and basal reader approaches in this study were based on vocabulary, comprehension, and attitude toward reading as well as the number, type, and difficulty of books voluntarily read during second grade. Near the end of kindergarten, children in three schools were randomly assigned to one of the two approaches. At the end of second grade there were 65 basal pupils and 69 individualized approach pupils for whom data was available. Because the Kuhlman-Finch Intelligence Test scores and the California Test of Mental Maturity scores indicated higher means for the basal group, adjusted means were used in reporting results. When the California Reading Test was administered at the end of second grade, the individualized reading group had significantly higher scores on comprehension than the basal group; the vocabulary scores favored the individualized group but were not significant. No significant differences were found in attitude toward reading from the San Diego County Inventory of Reading Attitudes. However, girls made significantly higher scores than boys on comprehension, vocabulary, and attitude toward reading. The quantity, variety, and difficulty of books read overwhelmingly favored the individualized approach. Tables are included. (DH)

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AN EXPERIMENTAL STUDY OF INDIVIDUALIZED AND BASAL READER APPROACHES TO TEACHING READING IN GRADES ONE AND TWO*

by

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Purpose:

The purpose of this study was to compare the effectiveness of the individualized approach to teaching beginning reading with the basal reader approach when pupils have had each approach through grades one and two on vocabulary, comprehension, attitude toward reading, and number, type, and difficulty of books voluntarily read during second grade.

Subjects:

Subjects were pupils in three schools in one suburban school district. They were randomly selected near the end of kindergarten for assignment to the two approaches used. Each school had one class taught by each approach. Different teachers taught pupils in first and second grades.

The subjects were from a single suburban school system ranging from upper lower to upper middle class. Eighty pupils started in three classes using the basal approach compared with 82 in the individualized approach. Class size varied from 25 to 30. Sixty-five basal pupils completed two years compared with 69 subjects taught by the individualized approach. Data reported and analyzed are for those present the entire two years.

Teachers:

Teachers were recommended by the principals and superintendent for participation but were assigned by the experimenter to the approach used. Teachers were all college graduates and had appropriate certificates from the State of Illinois. Initial experience varied from 0 to 20 years.

*This report is based upon an unpublished doctoral study by Miss Teigland. Data were reanalyzed on an IBM 360-65, using the November, 1968 revision of the Biomed General Linear Hypothesis Program.

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A series of seminars was held for all participants in which the philosophy and variety of procedures possible under the individualized approach were explained. Only one of the twelve participating teachers had previous training, but no experience, with the individualized approach. After the initial seminars, each group had regular sessions depending upon whether they were teaching individualized or basal approaches. In addition to the co-author, who supervised student teachers in the school and worked with the participating teachers, the basal reading teachers had some help from the consultant for the publishers of the basal reading series.

Instrumentation:

The Metropolitan Reading Test, Kuhlman-Finch Intelligence Test, and later, the California Short-Form Test of Mental Maturity, Level 1, were administered. Vocabulary and comprehension scores were from the California Reading Test, Upper Primary, taken at the end of the second year. Attitude scores toward reading were from the San Diego County Inventory of Reading Attitude. Lists of books by title and author read during the second year were kept for each child.

Means were almost identical on the Metropolitan but sufficiently different on the Kuhlman-Finch and the California Test of Mental Maturity that covariance was used on the data for the 65 basal and 69 individualized pupils who completed second grade.

Definitions:

By basal reading is meant a system of teaching reading using a coordinated series of readers and workbooks with a teacher's manual outlining in detail the objectives and procedures for each lesson. Identifying characteristics of this program are the controlled vocabulary, grouping according to the teacher's estimate of the child's ability level and potential to learn to read, and a promotion from one reader to another as the skills are progressively mastered.

By individualized reading is meant a program based on recognition of the differences in maturation at every age level. Through self-selection of reading materials that meet the pupil's needs, interests, and ability, it is assumed that the

child's reading development will be commensurate with his total growth pattern. Characteristics of individualized reading programs are the selection of reading materials from a library of trade books, magazines, and story collections, the teacher-pupil conference which replaces the scheduled reading group, flexible grouping for a variety of purposes, and evaluation based on individual progress.

Results:

TESTING

Table 1

MEANS AND ADJUSTED MEANS, READING COMPREHENSION, READING VOCABULARY, AND ATTITUDE TOWARD READING (CALIFORNIA MENTAL MATURITY IQ AS COVARIATE) BY SEX AND BY READING GROUP

			Comprehension		Vocabulary		Attitude	
Group	N	IQ	Original	Adjusted	Original	Adjusted	Original	Adjusted
Basal								
Male	35	112.99	36.94	34.98	37.46	36.41	15.34	15.13
Female	30	112.25	39.63	38.12	38.93	38.13	18.27	18.10
Individualized								
Male	35	108.41	35.43	36.26	36.77	37.22	16.54	16.63
Female	34	105.69	40.79	43.29	39.38	40.71	18.36	18.62

Kuhlman-Finch IQ's had medians of 118.5 and 116.5 for the basal group during the first and second years, respectively, compared with the individualized medians of 111.0 and 112.5. Median percentile ranks on the Metropolitan Readiness Test were almost the same for the two groups the first year, 85.85 for the basal group and 85.04 for the individualized group. The Kuhlman-Finch scores and the California scores reported above indicated that the basal pupils had apparent consistently higher medians and means on tests of academic potential. Hence, the use of covariance and the reporting of adjusted means seemed appropriate.

Table 2

ANALYSIS OF VARIANCE TABLE FOR READING VOCABULARY SCORES BY SEX AND GROUP

Source	Sum of Squares	D.F.	Mean Square	F	Prob.
Group	88.8581	1	88.8581	2.305	<.25
Sex	224.9168	1	224.9168	5.834	<.025
Sex-Gp.	26.3409	1	26.3409	0.683	<.50
Error	4,973.2907	129	38.5526		

Table 3

ANALYSIS OF VARIANCE TABLE FOR READING COMPREHENSION SCORES BY SEX AND GROUP

Source	Sum of Squares	D.F.	Mean Square	F	Prob.
Group	323.6961	1	323.6961	4.589	<.05
Sex	856.7804	1	856.7804	12.411	<.001
Sex-Gp.	125.7627	1	125.7627	1.822	<.25
Error	8,905.5805	129	69.0355		

Table 4

ANALYSIS OF VARIANCE TABLE FOR READING ATTITUDE SCORES BY SEX AND GROUP

Source	Sum of Squares	D.F.	Mean Square	F	Prob.
Group	31.5082	1	31.5082	1.711	<.25
Sex	203.7506	1	203.7506	11.066	<.005
Sex-Gp.	8.0571	1	8.0571	0.438	<.70
Error	2,375.1412	129	18.4119		

Table 5

ADJUSTED VOCABULARY SCORES, MEANS, AND DIFFERENCES BY SEX AND READING GROUP

	Basal	Individualized	I - B	Means
Male	36.41 (35)	37.22 (35)	0.81	36.82 (70)
Female	38.13 (30)	40.71 (34)	2.58	39.50 (64)
F-M	1.72	3.49		2.68
Means	37.20 (65)	38.94 (69)	1.74	38.10 (134)

Table 6

ADJUSTED COMPREHENSION SCORES, MEANS,
AND DIFFERENCES BY SEX AND READING GROUP

	Basal	Individualized	I - B	Means
Male	34.98 (35)	36.26 (35)	1.38	35.62 (70)
Female	38.12 (30)	43.29 (34)	5.17	40.86 (64)
F - M	3.14	7.03		5.24
Means	36.43 (65)	39.58 (69)	3.15	36.63 (134)

Table 7

ADJUSTED READING ATTITUDE SCORES, MEANS,
AND DIFFERENCES BY SEX AND READING GROUP

	Basal	Individualized	I - B	Means
Male	15.13 (35)	16.63 (35)	1.50	15.88 (70)
Female	18.10 (30)	18.62 (34)	0.52	18.38 (64)
F - M	3.07	1.99		2.50
Means	16.50 (65)	17.61 (69)	1.11	17.07 (134)

Females made significantly higher adjusted scores than males on comprehension, vocabulary, and attitude toward reading.

The individualized reading group had significantly higher adjusted scores on comprehension than the basal group.

Ninety-five percent confidence intervals for differences are as follows: (Those which do not cross zero are significant.)

Female-male comprehension	(5.24)	2.39, 8.09
Individual-basal comprehension	(3.15)	0.31, 5.99
Female-male vocabulary	(2.68)	0.55, 4.81
Individual-basal vocabulary	(1.74)	-0.38, 3.86
Female-male attitude	(2.50)	1.03, 3.97
Individual-basal attitude	(1.11)	-0.63, 2.85

The apparent adjusted differences on vocabulary seeming to favor the individualized group were not significant nor were the apparent adjusted differences on attitudes toward reading.

None of the interactions between sex and reading group was significant.

On reading vocabulary, the adjusted mean for individualized females significantly exceeded the adjusted mean for basal males. The 95 percent confidence interval, using Scheffe's method was (difference of 4.30) 0.06 to 8.54. On all other possible comparisons, the confidence interval included the zero.

On reading comprehension, there were significant differences between the adjusted means for individualized females and the basal males and between the same females and the individualized males. Ninety-five percent confidence intervals for these are, respectively, (8.31) 2.45 to 14.17 and (6.03) 0.58 to 11.48. All other confidence intervals for possible differences include the zero.

There were three significant differences among group-sex means on the adjusted attitude scores. These are as follows, with confidence intervals:

Individualized females versus basal males (3.49) 1.80 to 5.18.
Basal females versus basal males (2.97) 1.22 to 4.72.
Individualized females versus individualized males (1.99) 0.23 to 3.75.

All other confidence intervals for possible differences include the zero.

Books Read:

Random samples of 36 children each were selected from the two groups and books reported by teachers as read during second grade (the teacher was satisfied from a pupil report that the child understood the content beyond what he could have gained from pictures) were classified into eight Dewey Decimal categories and into 20 difficulty levels ranging at 5-month intervals from pre-school through eighth grade.

The mean number of books read for Group 1, basal, was 24.44. For Group 2, individualized, the mean was 61.69, a difference of 37.25 books per child, or about $2\frac{1}{2}$ times as many books for each child in the individualized group.

Mean difficulty level for the books read by the individualized pupils was about five months more advanced than those read by the basal group.

Individualized pupils read a somewhat lower proportion of books than expected in the easy, no-plot classification, and somewhat more than expected in each of the other seven categories. Basal pupils read a higher proportion of easy, no-plot books,

and a lower proportion than expected in the other seven categories. Using chi-square here, proportions differed from expectation beyond the .001 level.

Conclusions:

In this study, sex made more difference in performance on tests of comprehension, vocabulary, and attitude toward reading than did reading method.

Individualized pupils had significantly higher scores in comprehension.

The evidence, though not overwhelming, favors pupils in the individualized program for performance on a test of reading comprehension and reading vocabulary.

Evidence from a nonreactive measure, quantity, variety, and difficulty of books voluntarily read, which is probably a more significant goal of reading instruction than performance on a standard text, overwhelmingly favored the individualized approach.

Discussion:

When pupils in the individualized program do two and a half times as much reading as those in the basal program during second grade, one wonders why they do not profit sufficiently from all this practice to show a larger margin on the tests of reading comprehension and reading vocabulary. Two reasons suggest themselves:

1. The reading test may be fairer on vocabulary to those in a reading program with a high degree of control of the vocabulary introduced than it is to the individualized program.

2. The reading test used may have had too a low a ceiling for the purposes of this experiment. The test has a possible score of 45. Thirty of 65 pupils in the basal group made scores from 41 through 45. Thirty-three of the 69 pupils in the individualized group made scores in the same range. Ten or eleven were at the top in each group. The test of comprehension had a possible score of 55. Only two pupils from each group were in range from 51 to 55 on this test.

Another indication that the tests were perhaps too easy to use with the pupils in either group comes from the following comparison of unadjusted scores with norms from the test manual.

Table 8

GRADE EQUIVALENTS AND PERCENTILE EQUIVALENTS
OF MEAN COMPREHENSION AND VOCABULARY SCORES
BY SEX AND BY READING GROUP

	Comprehension		Vocabulary	
Group	Grade Equivalent	Percentile Equivalent	Grade Equivalent	Percentile Equivalent
Basal				
Male	3.7	90	3.7	92
Female	3.9	94	3.9	96
Individualized				
Male	3.6	88	3.7	91
Female	3.9	95	3.9	96

Had these children had median IQ's of about 100, then the above grade equivalents would have been expected to be about 2.8 or 2.9 at the time they were tested and the percentile equivalents of the mean scores would have been near 50. With IQ's ranging from about 106 for the individualized females to about 113 for the basal males, expected achievement would be somewhat higher than this, but probably not as much as the above table indicates. The test manual also gives an "ISI" score, "index of intellectual status" which the California test people introduced with their revised norms in 1963. These allow for age and mental age differences within a grade, and are somewhat different from IQ's. The above scores would be expected from pupils with ISI scores from 122 to 133 according to the test manual.

It is apparent that both groups were well taught and apparently achieved gratifyingly well for those who worked with them.

This experiment might well be repeated on a somewhat larger scale. If it should be, tests with a higher ceiling might be used. Other nonreactive measures might also be sought. Perhaps the best lesson from the study is that nonreactive measures such as the number, variety, and difficulty of books voluntarily read may be a better index of the comparative worth of different methods than the achievement tests which have so often been the sole measure in studies of this type.